Public Health Watch

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NotiPHy Nashville is Here!

A Public Health Emergency Communication Resource for Health Care Professionals in Nashville and Davidson County, Tennessee

Metro Public Health Department (MPHD) is proud to announce that ***NotiPHy Nashville,*** formerly known as Nashville Public Health Alert Network (NPHAN), is now fully operational**.** ***NotiPHy Nashville*** is a web-based notification system capable of alerting providers in Davidson County in true public health emergencies as well as offering periodic news updates on domestic preparedness and public health. The homepage offers multiple links to other websites such as local, state, and federal agencies. ***NotiPHy Nashville*** utilizes the latest in communications technology and software design melded into a system with three functional components: a publicly accessed homepage, an alert message system with subscriber database, and a secure website for providing limited access to confidential true emergency information.

NotiPHy Nashville allows Metro Public Health Department employees to rapidly alert health care providers using pagers, voicemail, fax, and email in a significant local public health emergency. The system is also capable of providing continual updates as the situation unfolds. Providers would receive an alert directing them to the website for specific information.

NotiPHy Nashville will also be utilized in notification of MPHD employees and volunteers in the community to assist in the community response. We encourage all healthcare providers in the community to visit the site and sign up today! For questions about NotiPHy Nashville, contact Cherry Entrikin at 615-340-5632.

Follow these simple instructions to sign up

Step 1: Type in http://notiphy.nashville.gov
Step 2: Click on: ***If you are a first time user, please register for a username and password.***
Step 3: Fill in all required fields including your preferred method of notification.
Step 4: Click on ***submit,*** located on blue bar at the bottom of page.
Step 5: **Remember your log-in and password!**
Step 7: Visit the website at least quarterly or when your information changes to update your contact information. You are able to change any of your information at any time by using your log-in and password. Your contact information will remain secure and you will only be alerted in a true emergency.

Air Pollution and Health: A Slippery Slope

Joseph Schuchter, M.P.H., Division of Epidemiology

As we have reached the middle of summer, we relish old pastimes while seeking new ones, and realize that some have arisen despite our reluctance. One such pastime of summer is air pollution. This really isn't anything new, but a dynamic and ever changing situation presenting cause for concern. Whether related to health, lifestyle, or pocketbooks, air pollution does have a cost. While some may consider it only a nuisance, for others the effects are much more acute. Air pollution does indeed affect everyone living in Nashville and Davidson County. It is timely then to reflect on our changing environment, discuss how it relates to our health, and consider ways to improve the situation.

The days of London fog, a disastrous air pollution episode in 1952, seem far removed. Today's industrial facilities are tightly regulated. Today's cars are cleaner, and generally, more efficient. Today we have precise, regular monitoring of the quality of air we breath, and when necessary, warning of it's potentially

continued on page two

In This Issue:

unsafe condition. This might lead us to believe that we should no longer worry about air pollution. However, a quick glance towards the horizon on a hot summer day tells us otherwise. The smog, the warnings on TV, the child or grandparent who must stay indoors are all signals of the changing environment and our adaptation to it. Not surprisingly, in recent decades the amount and types of air pollution have changed; hence the focus of concern has shifted to new and different culprits.

In general, today's industrial and fossil fuel combustion particles are of different sizes and physiochemical characteristics, and deposit in deeper regions of the lung.[1] Ozone and nitrogen oxides have been scrutinized in epidemiological studies as plausible causes of cardiovascular and respiratory health effects. Even more recently, particulate matter has come under the spotlight. Particulate matter, a mixture of liquid and solid material of varying size and chemical characteristics, is subdivided into two categories: PM10, inhalable particles with aerodynamic diameters of 10 ug or less, and PM2.5, respirable particles with aerodynamic diameters of 2.5 ug or less. PM10 can penetrate into the lower respiratory system and is generated from mining, agriculture, and road traffic, while PM2.5 can penetrate into the gas-exchange region of the lungs and is generated from combustion processes including power plants and automobiles.[2]

In order to inform policy makers, and the community, epidemiological studies are conducted to look at cause and effect relationships between air pollution and health events. However, establishing causality is no easy task; some scientists argue that such studies have never proven causality, but only demonstrated an association. The road to causality is pocked with the nuances of conducting epidemiological studies concerning the environment. Before any study is conducted, the hypothesized exposure (pollutant) – outcome (health event) association must be biologically plausible; it must have a logical biomedical explanation. Often plausibility is based on animal models; therefore doses and physiological processes must be extrapolated to the human model. Assuming plausibility is accounted for, the next step is to study the model in a controlled environment. However, it is obvious that the human environment is far from controlled. The relationships of interest are often confounded by a multitude of variables that are associated with both the exposure and outcome. These include climate and environmental conditions, other risk factors and health of the underlying population, and measurement effects in both the environment and underlying population.

Throughout the 1990s, studies focused on weather-driven, day-to-day variations in air pollution as determinants of mortality and hospital admissions.[1] These studies are advantageous in generating large differences in exposure over time while using routinely collected data; they are practical cross-sectional studies that can be conducted and acted upon at the local level. They have consistently correlated daily ozone and particulate matter concentrations with daily mortality and hospital admissions for respiratory and cardiovascular illnesses. In many cases these effects have been seen at exposure levels below current ambient air quality standards.[3] To date, this type of study has not been conducted in Davidson County. The Division of Epidemiology, in collaboration with the Division of Pollution Control, is conducting a similar study examining associations between Davidson County's air pollution (namely particulate matter and ozone concentrations) and health events (hospital admissions, mortality, and syndromic surveillance data).

One may ask, if this type of study has already been done, why do it again? The body of scientific evidence is indeed robust. However, it is common to see region-specific effects, often due to the population, the environment, and topography in that particular setting. Also, it often is a tedious and slow process for major multi-center studies to be conducted and ultimately affect national policy and local practice. While studies at the local level may not be able to demonstrate cause and effect, they can produce useful information for local decision-making.

The Division of Pollution Control has made excellent progress in reducing air pollution in Davidson County while providing a reliable system for air quality indexes and ozone forecasting (see http://healthinter.nashville.gov/env/aqi/psipoll.asp). However, particulate matter is not currently being forecast. It is hoped that the study underway can provide objective, reliable information to validate the need for PM forecasting. Also on the horizon is an assessment of ozone awareness in Davidson County and Middle Tennessee. This will help gauge our community's perceptions and needs regarding the air we breath.

For more information regarding the studies mentioned, please contact Joseph Schuchter at joseph.schuchter@nashville.gov or by calling 615-340-2733.

For further information regarding air pollution, please contact Rob Raney at rob.raney@nashville.gov or by calling 615-340-5653.

References:

[1] Brunekreef, B. and S. T. Holgate (2002). "Air pollution and health." Lancet 360(9341): 1233-42.

[2] Schwartz, J., D. W. Dockery, et al. (1996). "Is daily mortality associated specifically with fine particles?" J Air Waste Manag Assoc 46(10): 927-39.

[3] Schwartz, J. (1994). "PM10, ozone, and hospital admissions for the elderly in Minneapolis-St. Paul, Minnesota." Arch Environ Health 49(5): 366-74.

Prematurity: A Silent Epidemic

Pearl Hann, Director of Program Services
March of Dimes, Music City Division

Prematurity kills more babies in the first month of life than any other cause and is the leading cause of death for African-American babies before their first birthday. This silent epidemic affected 10,938 Tennessee babies in 2001 (nearly a half million nationally).[1] Prematurity, or preterm birth, is the chief problem in obstetrics today, accounting for 70% of deaths in the perinatal period.[2] Any infant born before 37 weeks of gestation is considered premature and is usually low birthweight. Preterm birth is a leading challenge in pediatrics – it is a major determinant of neonatal, infant, and lifetime mortality and morbidity. Half of all long-term neurologic disabilities in children are related to prematurity.[2]

In 2001, Tennessee ranked 47th in the nation for highest prematurity rates, with 14.0 percent of babies born preterm as compared to 11.9 percent for the U.S.[3], 17.6% higher in Tennessee. Even greater cause for concern is that the prematurity rate for Tennessee's African-American babies was 41 percent higher than Tennessee's white babies in 2001.[3]

In addition to race, disparities in prematurity also exist in age, education, and gender, as depicted in the table at right. Adolescents and women age 35 and over are at higher risk for prematurity than other maternal ages. Preterm rates decrease with increasing education levels. Males are at higher risk for prematurity than females. With the exception of preterm birth rates for American Indian or Alaska Native, Tennessee exceeds the national preterm rates in all categories listed. With the national 2010 Healthy People Objective to reduce preterm rates to no more than 7.6 percent, Tennessee confronts a major health care challenge in this first decade of the 21st century.

The emotional costs of prematurity are staggering as families learn to navigate the medical and educational environment of the neonatal intensive care unit and experience the intermittent hope and despair as their preterm infant struggles for life and breath. The fortunate parents eventually get to take their baby home and many survivors grow up healthy. But, as many as 25 percent of the smallest babies may have long-term disabilities, including mental retardation, cerebral palsy, and blindness.[4]

The financial costs of prematurity are equally as daunting:

- Average hospital charges in the U.S. in 2000 for a typical newborn stay was $4,500 (3 days) contrasted with $58,000 (22.8 days) for a prematurity-related newborn stay[5]—12.9 times higher.
- The net cost of health care for treatment of preterm newborns covered by employer health plans has been estimated at $4.7 billion, equivalent to approximately two percent of corporate after-tax profits.[6]
- The average costs of providing services for a six-month period for one Tennessee child (born preterm) under three years of age with significant delays was: $3,937 for speech and language therapy, $1,944 for occupational therapy, $2,861 for physical therapy, $484 for vision services, $2,631 for nursing services, $167 for transportation services, $2,023 for in-home early intervention

continued on page four

Prematurity in Tennessee vs. U.S., 2001

Percent of Live Births

Indicator		Tennessee	U.S.
Total preterm births		14.0	11.9
Mother's race/ethnicity	American Indian or Alaska Native	12.2	13.2
	Asian or Pacific Islander	11.9	10.3
	Black or African-American	18.2	17.5
	White	12.9	11.0
	Hispanic or Latino	12.4	11.4
Age of Mother	Under 15 years	29.8	22.2
	15 - 19 years	14.9	13.9
	20 - 24 years	13.9	11.9
	25 - 29 years	12.8	10.9
	30 - 34 years	14.0	11.3
	35 years and older	15.9	13.4
Mother's Education Level (aged 20 years and over)	Less than high school	16.2	13.0
	High school graduate	14.1	12.4
	At least some college	12.7	10.7
Gender	Female	13.5	11.4
	Male	14.4	12.5

Source: National Center for Health Statistics, National Vital Statistics System,
DATA 2010…the Healthy People Database, June 2003.
http://www.cdc.gov/nchs/about/otheract/hpdata2010/aboutdata2010.htm#How%20to%20construct

services, and $2,805 for center-based early intervention services, totaling $16,852.[7]

- Prematurity/low birthweight accounts for 35 percent of all health care spending on infants and 10 percent of all health care spending on children.[2]

Clearly, prematurity prevention makes economic sense. And, the gravity of preterm morbidity and mortality calls for serious intervention. Yet, the March of Dimes learned from exploratory research across the country that preterm birth is not widely perceived as a problem. In a recent March of Dimes national survey of 1,967 adults, only 35 percent of respondents identified prematurity as "very serious" or "extremely serious." In the same survey, more than 50 percent believed the rate of preterm birth is declining or about the same. Only 28 percent of pregnant women felt that preterm birth is an "extremely or very common problem" in the U.S. Not seeing preterm birth as a common and serious problem largely cuts across people of every age, gender and ethnic group. Perhaps even more disturbing is that 43 percent of pregnant women at 27+ weeks gestation reported that their health care provider had not talked to them about the signs and symptoms of preterm labor.[8] Yet, when a pregnant woman identifies the signs and symptoms of preterm labor and acts promptly to seek medical intervention, preterm delivery often can be prevented or at least delayed long enough to administer corticosteroids that speed maturation of fetal lungs, reducing infant deaths by 30 percent and decreasing the incidence of the two most serious complications of premature birth, respiratory distress syndrome (by 50 percent) and bleeding in the brain (by 70 percent.)[9]

Every pregnant woman should be considered at risk of preterm birth. Around the 20th week of pregnancy, all pregnant women should learn the signs and symptoms of preterm labor and what to do should they occur. However, some factors increase the risk of preterm birth. These include:

- Pregnant with twins, triplets, or more
- Previous preterm birth
- Certain uterine or cervical abnormalities

Researchers have also identified other risk factors. For instance, African-American women and women younger than 17 or older than 35 are at greater risk than other women. Experts do not fully understand why and how these factors increase the risk that a woman will have preterm labor or birth.

Some studies have found that certain lifestyle factors may put a woman at greater risk of preterm labor. These factors include:

- Late or no prenatal care
- Smoking
- Drinking alcohol
- Using illegal drugs
- Domestic violence, including physical, sexual, or emotional abuse
- Lack of social support
- High levels of stress
- Long working hours with long periods of standing
- Low income

Certain medial conditions during pregnancy may increase the likelihood that a woman will have preterm labor. These conditions include:

- Premature rupture of the membranes
- Urinary tract infections, vaginal infections, sexually transmitted infections and possibly other infections
- High blood pressure
- Diabetes
- Clotting disorders (thrombophilia)
- Being underweight before pregnancy
- Obesity
- Short time period between pregnancies (less than 6 – 9 months between birth and beginning of the next pregnancy)
- Certain birth defects in the baby
- Bleeding from the vagina

To help prevent preterm births pregnant women should:

- Know the warning signs of preterm labor
- Get regular prenatal checkups
- Reduce stress
- Avoid smoke, including second hand smoke, alcohol, or illegal street drugs
- Consult a health care provider for symptoms of urinary tract infection.

The March of Dimes is determined to reduce prematurity rates in Tennessee and across the nation. The March of Dimes will work to increase investment in public and private research to identify causes of preterm labor and prematurity and to identify and test promising interventions. The organization will also strive to increase awareness of the serious nature of prematurity, by educating pregnant women about the signs and symptoms of preterm labor and to offer continuing education to health care providers to improve risk detection and addressing risk-associated factors. In addition, the March of Dimes recently launched a $75 million national campaign to reduce preterm births by 15 percent by 2007. The first phase of the five-year campaign is to increase awareness of the signs and symptoms of preterm labor.

continued on page five

Prematurity: A Silent Epidemic ...continued from page four

The March of Dimes has developed a patient education flyer to assist providers in this prematurity prevention initiative. Copies of the flyer are available at no cost to health care providers and can be obtained by contacting the local March of Dimes office by e-mail at phann@marchofdimes.com or by phone at 615-399-3200.

References:
[1]March of Dimes, Peristats, with final natality data from National Center for Health Statistics, 2001.
[2]March of Dimes, *Prematurity: Plan for a National Campaign*, Dec. 2002
[3]National Center for Health Statistics, National Vital Statistics System, DATA2010 ... the Healthy People Database, June 2003.
[4]March of Dimes, 2002 Annual Report.
[5]Agency for Healthcare Research and Quality, Healthcare Cost Utilization Project, 2000 Nationwide Inpatient Sample—diagnosis code includes short gestation and low birthweight. Prepared by the March of Dimes Perinatal Data Center, 2002.
[6]Chollet J, Newman JF, Sumner AT. "The Corporate Cost of Poor Birth Outcomes." Center for Risk Management and Insurance Research, Georgia State University, 1992.
[7]Wolraich ML, Foster M, Willis S, Cushing L. "Identifying the Services, Costs, and Reimbursements for Young Children with Disabilities Through Data Collected by Tennessee Part H IDEA Program", Vanderbilt University, April 1996.
[8]Porter Novelli. "Exploratory Focus Group Findings on Issues Related to Prematurity." Prepared for March of Dimes. Dec. 2001.
[9]March of Dimes. Preterm Birth Fact Sheet, 2001.

Bright Beginnings

Ruth B. Craven, R.N., B.S.N.

Each year almost 1 million teenage girls in the U.S. become pregnant.[1] The United States has the highest rates of teen pregnancy and births in the western industrialized world. Tennessee ranks 44th in the nation for having the most teen births among teens aged 15 - 19 years[2], 4,687 teen pregnancies in 2001.[3] Although these statistics may seem disheartening, there is good news. Teen pregnancy rates in the United States have declined steadily in recent years, especially in the African-American population, which experienced a 23% reduction in 1998. The decline has been attributed to more effective birth control practices and decreased sexual activity among teens.[1] Still, much work remains to be done in order to lower teenage birthrates.

Research has shown that teenage mothers tend to have poor eating habits; do not gain adequate weight during pregnancy; are more likely to smoke, drink, and use drugs; and are less likely to seek regular prenatal care. This, in turn, can lead to serious health consequences for their babies, such as prematurity, low birth weight, birth defects, and even death. Socially, there are many consequences as well. Teen moms are less likely to complete high school and more likely to rely on welfare, while their children are more likely to become victims of abuse and neglect, attain lower academic achievement, and engage in delinquent behavior.[1]

In response to a growing concern for sexually active and pregnant teens here in Davidson County, the Metropolitan Public Health Department (MPHD) implemented Bright Beginnings in March of 2003. The purpose of Bright Beginnings is to help teen girls make responsible and informed decisions about sex; receive access to contraception; maintain a healthy lifestyle before, during, and after pregnancy; enter into early prenatal care; obtain adequate medical insurance during pregnancy; and give birth to healthy babies. In order to accomplish these goals, several free services are offered to the girls. Pregnancy tests, presumptive TennCare, W.I.C. (Women, Infants, and Children) nutrition services, prenatal vitamins, prenatal education, family planning counseling, contraception, aid with finding an obstetrician, and case management by a registered nurse are just some of the services teens who are involved with the program receive.

Currently the Bright Beginnings program is offered at MPHD's Lentz Public Health Center's Primary Care Clinic. No appointment for services is necessary. All a teen has to do is come to Room 120 between the hours of 7:30 a.m. and 3:30 p.m.and sign in at the front desk. All patient health information is kept confidential.

One hundred percent of the teens currently followed in Bright Beginnings have entered into early prenatal care, are taking prenatal vitamins, and are taking steps to maintain their health during pregnancy. Most of the teens plan to breastfeed and to choose a reliable method of contraception after their child is born.

For more information about the Bright Beginnings program, call (615) 340-2183 or fax (615) 340-2199.

References:
[1] Healthcommunities.com. Teen Pregnancy. Available at: http://www.womenshealth channel.com/teenpregnancy/index.shtml. Accessed on June 16, 2003.
[2] teenpregnancy.org. Across America. Available at: www.teenpregnancy.org. Accessed on August 4, 2003.
[3] Health Statistics and Research. Bureau of Health Informatics. Tennessee Department of Health.

Reported Cases of Selected Notifiable Diseases for May/June 2003

Disease	Cases Reported in May/June		Cumulative Cases Reported through June	
	2002	2003	2002	2003
AIDS	45	69	105	138
Campylobacteriosis	8	2	15	4
Chlamydia	301	485	1,012	1,427
DRSP (Invasive drug-resistant *Streptococcus pneumoniae*	4	0	18	13
Escherichia coli 0157:H7	1	0	1	0
Giardiasis	8	0	18	7
Gonorrhea	204	284	622	785
Hepatitis A	3	0	12	3
Hepatitis B (acute)	5	0	10	9
Hepatitis B (perinatal)	3	4	13	15
HIV	53	70	158	159
Influenza-like Illness	2	0	223	917
Neisseria meningitidis disease	1	0	2	0
Salmonellosis	19	8	34	24
Shigellosis	4	1	7	6
Syphilis (primary and secondary)	0	5	20	14
Tuberculosis	12	5	31	23
VRE (Vancomycin-resistant enterococci)	7	5	35	28

To report a notifiable disease, please contact:

Sexually transmitted diseases: Brad Beasley at 340-5676
Tuberculosis: Alisa Haushalter at 340-5650
AIDS/HIV: Mary Angel-Beckner at 340-5330
Hepatitis C: Pat Sanders at 340-5632
Hepatitis B: Denise Stratz at 340-2174
Vaccine-preventable diseases: Mary Fowler at 340-2168
All other notifiable diseases: Pam Trotter at 340-5632

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